

Retrospective Assessment of Blood Donor Deferral Causes: An Observational Study

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Abstract— Detailed analysis of various causes for deferral of blood donors may help medical personnel to curb the barriers that impede the blood donation. The meaning of deferrals is to loss of precious whole blood donors (WBD) and blood units available for transfusion purposes. Knowledge of rate and causes of donor deferral can guide the recruitment strategy for WBD.

Keywords- analysis, deferral, whole blood donors, transfusion.

I. INTRODUCTION

Blood wellbeing is continually remaining a state of concern. In blood donation center all the procedures are beginning with donor selection. People disqualified from giving blood are known as “deferred” donors.

Blood donor deferral is a difficult and sad experience for the blood donor as well as the blood center screening the donor. These deferrals “bleed” the donor-recruiting efforts of a blood center; constrain more efforts diverted to new recruitments. Moreover, deferring prospective donors often leaves them with negative feelings about themselves as well as the blood donation process.[1] Additionally these donors are less likely to return for blood donation in future.[2] Nonetheless, criteria for these deferrals and their implementation strongly influence the quality of blood supply in a population. Thus, every blood centre has to balance the fulcrum between acceptable quality and desired quantity.

II. BLOOD DONOR SELECTION

All imminent blood donors ought to in this manner be surveyed for their reasonableness to give blood, on each occasion of donation. The purpose of blood donor selection is to:

- Look for donor health and security by collecting blood only from healthy person.
- Ensure patient safety by collecting blood only from donors whose donations, when transfused, will be safe for the recipients
- Identify any factors that might make a person unsuitable as a donor, either temporarily or permanently
- Reduce the unnecessary deferral of safe and healthy donors
- Ensure the quality of blood products derived from whole blood and apheresis donations
- Minimize the destruction of resources resulting from the collection of unsuitable donations [3].

III. LITERATURE REVIEW

Deferral was a history of jaundice, the study showed the reason as low hemoglobin followed by hypertension and cardiac causes [4]. According to [7] deferral percentage increased significantly ($P < 0.05$) as the age of the donor

increased to >40 years and more donors were deferred due to abnormal blood pressure readings with increasing age. The most common reason for deferral was low hemoglobin followed by an abnormal blood pressure recording and ongoing medications in the study. The study laid emphasis on determination of rate and causes of deferral of donors to work as strategy making effort for recruitment and retention of blood donors both regionally and national [5]. Another study from Delhi region showed low hemoglobin as the most common cause of deferral. However, second and third most common reasons in their study were low weight and history of jaundice/hepatitis [6].

In a study from New Delhi, a total donor deferral rate was 5.1%. The deferral rate was significantly higher for females (32.7%) than for males. Similarly, rates of deferral among voluntary donors (2%) was lower than the replacement donors with statistical significance.[9] In contrast, Agnihotri found that the related donors had a significantly low deferral rate as compared with voluntary donors, and deferral rate increased as age increased [8]. The most common cause of deferral was low hemoglobin in donors, and other common causes were ongoing medication (s) , intake of alcohol within 24 h , and fever and/or infection . The majority of donors were among younger age group ranging 26–35 year [9].

In a study of donor deferral among students in Northern Japan, 23% donors were deferred. The main reasons for temporary deferral were reported as low hemoglobin, questionnaire-based interview decisions, and medication. The study concluded that focus on deferred donors and the causes are important in planning recruitment strategies and returning of deferred donors due to temporary reasons so as to reduce the loss of blood donors [10].

In a study from Huelva (South Western Spain), the role of women was determined in altruistic blood donations. The study described the willingness of women to donate blood to be higher than men. However, the deferral was higher in women due to low hemoglobin levels, poor venous access, and higher frequency of vasovagal reactions. The study concluded a donor fidelity of 48.6% for women and 58.6% for men and emphasized on the need to adapt measures to ensure reduction in deferrals of women as blood donors and bring in more women in the pool of regular blood donors.[11]

IV. BLOOD DONATION

Blood donation (phlebotomy) is a deliberate methodology in which a portion of blood is drawn and prepared in order to create an item for blood transfusion. There are mainly two

strategies for blood donor accessible; entire blood donation and platelet donation (apheresis).

There are four fundamental segments of blood: red blood cells (erythrocytes), blood cells (leukocytes), platelets (thrombocytes) and plasma. Red blood cells and plasma make up the dominant part of entire blood; 45% and 55% respectively, with white blood cells and platelets make less than 1% of the complete mass [12]. Figure 1 shows the components of blood and figure 2 shows the blood donor selection process.

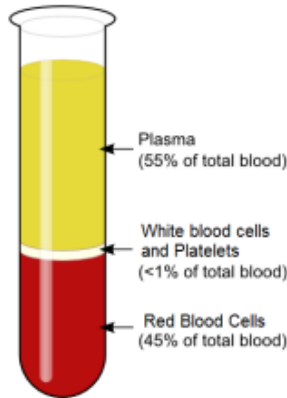


Figure 1: Blood Components

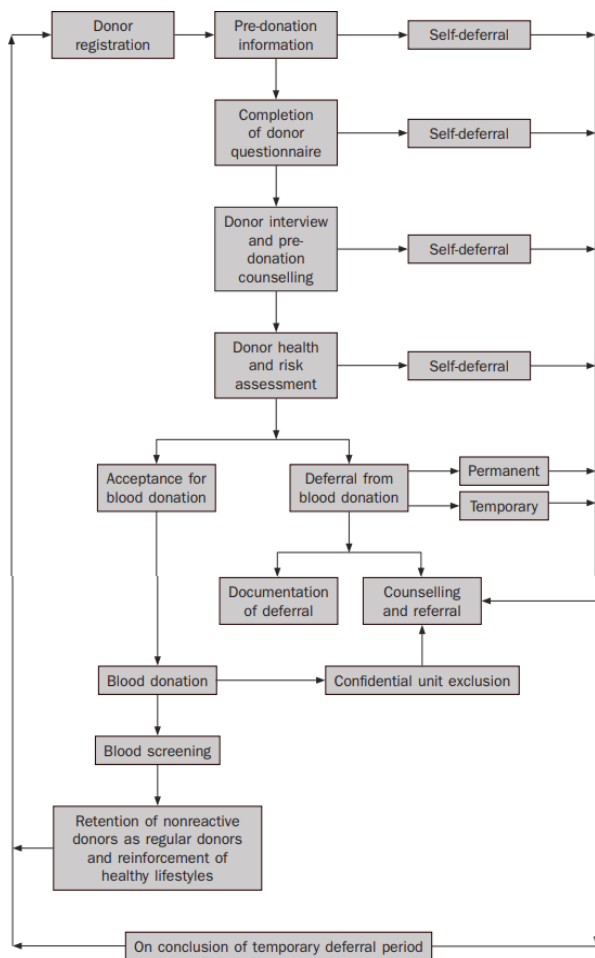


Figure 2: The blood donor selection process

The steps involved in the donor selection process, prior to

blood collection, are shown in Figure 2.

1. Donor registration
2. Pre-donation information
3. Completion of donor questionnaire
4. Donor interview and pre-donation counselling
5. Donor health and risk assessment
6. Informed consent.

V. DONOR RECORDS

There should always maintain the record of the health, medical history and TTI risk assessment of the donor. the record should signed by the doctors. Donor record should be secret, easily retrievable and traceable. It should be traceable from donor to the patient receiving transfusion and vice versa.

Key records that included dates, times and signatures, to be cultivate and saved during the donor selection process. the record should include:

- Registration information of donor
- Completed donor questionnaires and informed consent
- Result of donor interview and assessment
- Deferral records of donor
- Unique donation number for each donation
- Donor counselling and follow-up records
- Adverse donor events and reactions
- Deferral registry of donor

VI. DONOR DEFERRAL

Donors who don't fulfill the determination criteria should be deferred. This deferential can be temporary or permanent. All deferred donors should be approached in a secure way, and tell them the reason of deferral. The donor can ask any query related to his or her deferral. The donor should to be informed that whether the deferral is not suitable for the donor health or it is not safe for recipient. It is the obligation of the organization to guarantee that donors who are deferred because of medicinal conditions. The donor should refer for detail analysis and management.

Studies have discovered that deferral negatively affects future donor return, especially by first-time donors and those deferred for more than a year [13, 14]. Deferred donors should be considered when they could donate the blood again. Donors cannot donate the blood again if unacceptable data is given about the purpose behind deferral. Several deferred donors don't suddenly come back to give blood and may should be reviewed after the deferral time frame is finished. Guiding of deferred blood donors could upgrade the consistence of benefactors to look for follow-up medicinal care [15].

Donor deferral records also enable the previous deferral status of donors to be checked and decisions made on the re-entry of temporarily deferred donors.

A donor deferral registry (DDR) is a private list of donor who are positive for a transfusion-transmissible disease and who have been forever deferred. A DDR is utilized to record the occurrence and predominance of such infections in the donor list and may likewise help with distinguishing area that require reinforcing in the donor selection process.

VII. DONOR DEFERRAL CAUSES

Low hemoglobin levels and a history of hepatitis B infection were the most common factors for temporary and permanent donor deferrals, respectively.

The second most regular reason for pre-donation deferral was high BP particularly in males. High BP in a few was analyzed for first time, while rest was the instances of uncontrolled hypertension taking drugs. Suffering from cold, cough, and fever at the time of donation can also be a cause of deferral. This might be straightforward viral contamination, which requires deferral of few days, or the cough might be of long term and suggestive of tuberculosis requiring the donor to take medical counsel, in which cases the deferral is for couple of years.

History of sexual exposure is also one of the obvious cause of permanent deferral especially in the younger age group between 18 to 30 years.

Level of training did not have any effect on the level of deferrals. There were equivalent number of graduates and less-educated forthcoming donors who were deferred [16].

VIII. CONCLUSION

The paper gives a study about requirement of blood donation. Transfusion of blood saves millions of life all over the world every day. Reasons of deferral vary according to area and center. It is necessary to ensure that safe blood and blood product are given by the blood donation center and donors. Every donor is screened to guarantee the blood drawn is alright for transfusion. Consequently keeps the recipients secured from transmissible diseases and different issues

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